CHAPTER 1. FUNDAMENTALS

Imagery, along with the graphical, geospatial, and textual intelligence products derived from it, is an increasingly critical element in the planning and decisionmaking efforts of commanders and supporting staffs at all echelons. Much of the imagery available to the Marine air-ground task force (MAGTF) commander requires detailed analysis by highly trained specialists to fully exploit its value. Imagery and imagery-related information—when processed, exploited, analyzed, and fused with other intelligence information—results in IMINT.

"If you can't get behind enemy lines and peer around with your own good eyes, what's your next best bet? A photograph, isn't it?"

—FMFRP 12-16, *Front Line Intelligence*

Principal sources of imagery and related data are national overhead intelligence systems such as satellites; manned aircraft such as the F-14 or F/A-18 with the advanced tactical airborne reconnaissance system (ATARS); the U-2 and the joint surveillance target attack radar system (J-STARS); unmanned aerial vehicles (UAVs); and various hand-held cameras.

Imagery intelligence (IMINT) is intelligence information derived from the exploitation of collection by visual photography, infrared sensors, lasers, electro-optics, and radar sensors such as synthetic aperture radar wherein images of objects are reproduced optically or electronically on film, electronic display or other media. (JP 1-02)

1001. OVERVIEW

IMINT Information vs. Intelligence

A critical distinction must be made when discussing, planning for, and executing IMINT operations and operations yielding imagery-related combat information. IMINT operations is a function performed by the G-2/S-2 that involves imagery analysis and integration with other intelligence activities to produce all-source intelligence products. The Marine Corps Imagery Support Unit (MCISU), the intelligence battalion's (intel bn's) imagery intelligence platoon (IIP), and unit intelligence personnel conduct IMINT operations, planning, collecting, producing, and disseminating evaluated information or intelligence to the commander, staff, and major subordinate commands (MSCs). To provide imagery analysis for fusion into intelligence, specifically trained technical personnel, adequate time, and sophisticated equipment are required. Imagery and related combat and sensor data from J-STARS, UAVs, and various reconnaissance sources with hand-held cameras may sometimes be rapidly disseminated to tactical commanders to effect decisions without extensive intelligence processing and analysis. This type of intelligence support is provided directly to the tactical commander without being analyzed or evaluated against other intelligence. Caution should be exercised to ensure that the commander is apprised of the strong potential for misleading information when the provided intelligence is based on a single, unevaluated intelligence source.

Imagery is the representation of objects reproduced electronically or by optical means on film, electronic display devices, or other media. (JP 1-02)

IMINT aids commanders and planners primarily through two forms of support. First, IMINT provides situation awareness for the terrain, both natural and manmade, to support the commander's intelligence preparation of the battlespace (IPB) effort through various baseline IMINT and geographic intelligence (GEOINT) based studies such as helicopter landing zones (HLZs); beach, coastal, port and airfield studies, and gridded reference graphics (GRG). Second, support is provided through imagery as a

confirming source of intelligence for another discipline such as signals intelligence (SIGINT) or human resources intelligence (HUMINT).

Objectives of IMINT

Reduce Uncertainty

IMINT must support the commander's decisionmaking process by reducing uncertainty about the hostile situation and the surrounding environment.

Counterintelligence and Force Protection

IMINT supports the identification of hostile intelligence collection operations; aids with the identification of MAGTF vulnerabilities that could be exploited by the enemy; and assists with the evaluation of friendly security measures to counter these.

Capabilities and Limitations of IMINT

Capabilities

IMINT is an extremely valuable part of intelligence. IMINT provides concrete, detailed, and precise information on the location and physical characteristics of both the threat and the environment. It is the primary source of information concerning key terrain features, installations, and infrastructure used to build detailed intelligence studies, reports and target materials. Order of battle (OOB) analysis, enemy courses of action assessments, development of target intelligence, and battle damage assessment (BDA) are intelligence functions that rely heavily upon IMINT.

Limitations

The major limitations of IMINT are the time required to task, collect, process, analyze, and disseminate the imagery product; the detailed planning and coordination required to ensure the collected imagery is received in time to impact the decisionmaking process; and the requirement for considerable assets in personnel, equipment, and communications connectivity to conduct IMINT operations. Also, imagery operations can be hampered by weather; enemy air defense capability; and enemy camouflage, cover, concealment and deception activities.

Sensors

Appendix A describes the basic capabilities and limitations of electro-optical (EO), radar, and infrared imagery sensors.

1002. RESPONSIBILITIES AND PRODUCTS

Overview

The Marine Corps relies on a complementary mix of tactical, theater, and national IMINT sources to support its intelligence planning and operations.

The MAGTF must use the full range of U.S. intelligence capabilities, from national through theater to organic, in support of the assigned mission. Due to the nature of expeditionary operations, the employment of organic MAGTF intelligence collection assets within the assigned area of operations (AO) is not feasible until just prior to the introduction of forces. This means

that national or theater intelligence assets must be relied upon for pre-deployment IMINT support.

The MAGTF will rely almost exclusively on external support during the planning and deployment phases of any operation. Even when employed, the MAGTF will continue to require national and theater support in specific areas to add depth to the reconnaissance effort and cover gaps in organic collection capabilities.

Marine Corps IMINT Responsibilities

The MAGTF G-2/S-2 has staff responsibility for intelligence, counter-intelligence (CI), and reconnaissance, to include support of IMINT operations. In conjunction with the G-3/S-3, the G-2/S-2 develops the intelligence operations plan (appendix 16 to annex B), the supporting IMINT (appendix 7 to annex B), and the reconnaissance and surveillance (R&S) plans (appendix 14 to annex B), which allocate resources and assign specific imagery reconnaissance and supporting missions to MAGTF and supporting elements. Together, these intelligence plans assign intelligence missions, reconnaissance missions, and tasks, and also allocate supporting resources.

Factors affecting the development of intelligence and supporting IMINT plans are—

- Priority intelligence requirements (PIRs) and intelligence requirements, to include the specific intelligence questions to be answered for each.
- Communications connectivity and information systems capabilities available, both in IMINT units as well as in supported commands.
- Time available.
- Available information and intelligence from other sources.
- Redundancy required.
- Assets available.
- Knowledge of the enemy situation.
- Enemy counter-reconnaissance capabilities.

Based on these factors, the commander's PIR, anticipated enemy activity, the MAGTF concept of operations, and the overall intelligence operations plan, the G-2/S-2 develops specific intelligence, reconnaissance and imagery-related tasks. Individual units are assigned reconnaissance tasks per the intelligence plan. The intelligence support coordinator (ISC), under the staff cognizance of the MAGTF G-2/S-2, establishes an intelligence operations center (IOC) to perform intelligence requirements management, staff cognizance of ongoing organic and supporting collection operations, intelligence analysis and production, and intelligence dissemination. The following are the key elements within the IOC:

- **Support Cell**—primary element for conducting Marine expeditionary force (MEF)-wide intelligence requirements management; weather support; collections and dissemination planning and direction; and

intelligence staff cognizance of MEF organic and supporting intelligence and reconnaissance operations.

- **Surveillance and Reconnaissance Center (SARC)**—primary element for supervising the execution of organic and supporting intelligence and reconnaissance plans.
- **Production and Analysis (P&A) Cell**—primary analysis and production element of the MAGTF. Processes and produces all-source intelligence products in response to requirements of the MAGTF. Additionally, principal IMINT and geographic intelligence (GEOINT) production element of the MEF.

MAGTF subordinate units also conduct intelligence and reconnaissance planning and operations in support of their own efforts through a variety of means. Close coordination with the ISC and IOC is essential to ensure overall effective MAGTF intelligence operations and intelligence support to all commanders. IMINT and imagery-related data and information are collected by a variety of assets, each with unique capabilities and limitations. The following MAGTF units and organizations are those most likely to be tasked with imagery-related collection missions and production support:

- MAGTF IMINT and imagery-related assets.
- Marine Corps Imagery Support Unit.
- Imagery intelligence platoon, intel bn.
- Marine unmanned aerial vehicle squadrons (VMUs).
- J-STARS common ground station (CGS).
- Marine fighter/attack (all weather) squadrons (VMFA[AW]s) F/A-18D.
- Marine light/attack helicopter squadron (HML/A) and AH-1W and UH-1N squadrons.
- Ground reconnaissance units with Manpack secondary imagery dissemination system (SIDS) or tactical intelligence photographic capability (TACPHOTO).

Types of IMINT Products

Major types of IMINT products include IMINT reports, hard copy prints, mosaics, overlays, annotated photographs, and various hard copy and electronic all-source intelligence products. See chapter 5 for a detailed discussion of imagery and IMINT products.

1003. RELATED TERMINOLOGY

Reconnaissance

A **reconnaissance mission** undertaken to obtain, by visual observation or other detection methods, information about the activities and resources of an enemy or potential enemy, or to secure data concerning the meteorological, hydrographic, or geographic characteristics of a particular area. (JP 1-02)

Broad Area Coverage, Directed Search Area, and Broad Area Search

These imaging strategies provide a reconnaissance capability to cover large areas of the earth's surface. These techniques are especially suited for providing large area coverage for baseline studies of terrain and lines of communication. On the negative side, they take extended time to produce large format mosaic prints, are normally produced at a low National Imagery

Interpretation Rating Scale (NIIRS) rating, and possess imagery quality of only fair to poor (see appendix B for a discussion of NIIRS).

Broad area coverage (BAC), also known as broad area search (BAS), are missions entailing imagery coverage of large areas of the earth's surface that enable analysis of a greater amount of area and provide the imagery needed for the creation of large area mosaics.

Directed search area (DSA) imagery missions identify a geographic region in the shape of a polygon that may contain from 3 to 24 corner points with latitude and longitude coordinates. This gives intelligence planners the flexibility to tailor intelligence collection and other operations plans to meet commanders' needs.

Route Reconnaissance or Lines of Communication Coverage

This imagery coverage is defined by a road, mobility corridor or other form of transportation passageway delineated by a specific start and end point. This type of reconnaissance is not limited to enemy areas but may be requested to facilitate friendly logistics or troop movements. The image product is normally produced as a variation of a standard mosaic, a strip map or as a GRG.

Battlefield Surveillance

The primary difference between R&S is that reconnaissance is normally a single "look" while surveillance denotes a continuous observation. Surveillance is not normally considered a capability of the imagery process, with the exception of J-STARS and UAVs. Both the J-STARS and UAV platforms have endurance limitations that do allow for the long-term continuous observation often required for operational support.

Battlefield surveillance is the systematic observation of the battle area to provide timely information and combat intelligence. (JP 1-2)

Point Target

A point target is a specified imaging target that is normally less than 1 nautical mile in diameter. It is meant for higher resolution imagery such as EO NIIRS (see appendix B for a discussion of NIIRS) of 5.0 or better to provide the clarity of detail required for specific equipment identification or for precision targeting solutions. This type of target is best suited for static/semi-static targets that will require detailed analysis to answer specific PIRs and IRs. Point targets are the most common technique used in imagery collection operations.

National Imagery

National imagery refers to imagery platforms under the control of a U.S. Government agency such as the National Imagery and Mapping Agency (NIMA). These platforms normally consist of imagery satellites used for military operations, treaty verification, mapping, and humanitarian assistance.

Theater Imagery

Theater imagery refers to the imagery platforms under the cognizance of the area commander in chief (CINC). These platforms normally comprise airborne platforms such as the U-2, high altitude or extended endurance UAVs, and F-14 tactical aerial reconnaissance pod system (TARPS).

Organic Imagery

Organic imagery refers to all other types of imagery platforms organic to or under the control of the MAGTF commander. These platforms range from hand-held cameras with ground reconnaissance teams to F/A-18D ATARS aircraft.

IMINT vs. Imagery

IMINT is fully analyzed and evaluated imagery and supporting detailed intelligence text reports (which may also include information from other intelligence disciplines such as SIGINT), whereas imagery consists of the raw, unevaluated pictures of an area or target. An annotated target graphic represents IMINT while either the on-screen picture or prints from the screen of a downlinked UAV represent imagery in an unevaluated form.

1004. ROLE AND FUNCTIONS

General

IMINT and other intelligence disciplines provide information regarding the enemy and the battlespace (weather and terrain) that help the commanders reduce uncertainty; identify opportunities for success; assess risk; outline their intent; make decisions that provide focus, generate speed, and tempo; and achieve decisive results.

Intelligence Functions:

1. Support to the commander's estimate.
2. Situation Development.
3. Indications and warning.
4. Force protection.
5. Targeting.
6. Combat assessment.

IMINT provides MAGTF commanders operational and tactical intelligence support. Imagery and IMINT contribute to all six specific intelligence functions: support to the commander's estimate, situation development, indications and warning (I&W), force protection, targeting, and combat assessment. Specifically, IMINT assists intelligence personnel with providing commanders with I&W of hostile action; IPB; identification of enemy disposition, location, and strength; situational development to confirm or deny enemy intentions and courses of action; and BDA to allow continual assessment of the effectiveness of friendly attacks and their effects on enemy strengths, vulnerabilities and capabilities.

Tactical IMINT Principles

Focus on Tactical Intelligence

National and theater imagery assets support the strategic and operational levels of war as well as tactical operations. MAGTF IMINT operations focus on the generation of tactical intelligence and the utilization of strategic/operational IMINT for tactical purposes. However, consideration

should always be given to required timelines for processing, exploitation, production and dissemination of imagery and IMINT products in relation to the speed that the MAGTF's tactical operation is progressing when selecting an imagery system to provide tactical support. For example, a theater system may not able to provide delivered tailored imagery or IMINT in the format required of the battle area in a timely enough manner to support tactical I&W decisions.

Intelligence is Focused Downward

While the management of IMINT collection and production is centralized in the MAGTF command element (CE), the focus is on providing imagery support needed to plan and execute the mission to every unit involved in the operation. Critical products will be pushed down to the tactical commander, who will be able to pull additional IMINT support as needed.

Intelligence Activities Require Centralized Management

Scarcity of IMINT assets, the broad geographic range and operational capabilities, and the requirement to focus IMINT resources on the commander's PIRs require centralized coordination and management. This centralization will be done in the MAGTF IOC, under the direction of the intel bn commander as the ISC. Although centralized management is generally required to best plan and use IMINT resources, mission, enemy, terrain and weather, troops and support available, time available (METT-T) may require the MAGTF commander to either attach or place task-organized IMINT elements in direct support of MAGTF subordinate elements to satisfy their IRs.

METT-T
Mission
Enemy
Terrain and Weather
Troops and Support Available
Time Available

G-2/S-2 Facilitates Utilization of Intelligence

The intelligence officer enables effective utilization of IMINT and all other intelligence and reconnaissance activities and products throughout the unit. As the principal disseminator of intelligence and a full and continuous participant in the planning process, the intelligence officer ensures that the full implications of the IMINT and overall intelligence picture are understood. This and the full intelligence operations mission are accomplished through three key subordinate officers. The first, the G-2 operations officer, is responsible for the provision and effective use of intelligence to the commanding general, the battlestaff, the current and future operations sections, and force fires. The second, the G-2 plans officer, is responsible for this support to the future plans team. Finally, the third is the intel bn commander as the assistant chief of staff (AC/S) G-2's ISC, having principal staff responsibility for the timely dissemination of intelligence throughout the MAGTF and ensuring it is understood, complete, and if any new IRs result from it.

Tailored and Timely Intelligence

Intelligence tailored to the requirements of the user provide a useful format, effect the development of pertinent IMINT and all-source intelligence products, and thus support decisionmaking. Dissemination of these intelligence products—not simply data, pictures or information—to the right place at the right time is the guiding principle of all intelligence dissemination activities.

Utilization: The Final Step

IMINT's value is derived from its support of decisionmaking. The IMINT intelligence cycle is not complete until the IMINT that has been developed is used to plan and/or execute operations. Central to this principle is the need for intelligence personnel to ensure that disseminated IMINT and other intelligence products have been received by all needing it; that they understand it; the degree that satisfies their previously stated intelligence requirements (IRs); and whether it leads to new IRs.

1005. IMINT AND THE INTELLIGENCE CYCLE

The IMINT cycle mirrors the intelligence cycle (see figure 1-1). These steps define a sequential and interdependent process for developing IMINT. Imagery-related data and intelligence should be passed directly to the appropriate user—depending upon the situation, either an intelligence command and control (C2) node or directly to commanders—to meet the requirement for rapid action related to the demands of current and future operations.

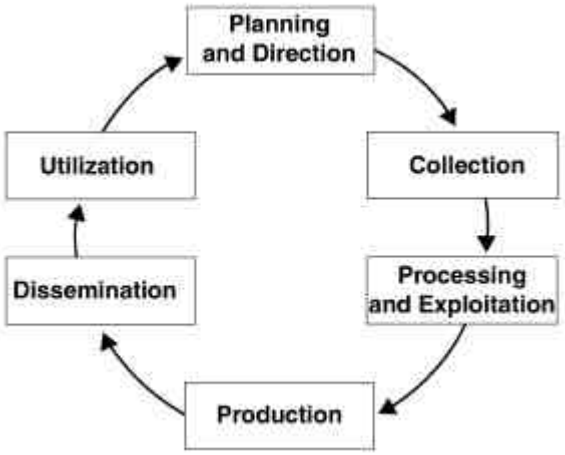


Figure 1-1. The Intelligence Cycle.

Planning and Direction

Planning and directing MAGTF IMINT operations includes the determination of IMINT intelligence collection requirements (ICRs), intelligence production requirements (IPRs), and intelligence dissemination requirements (IDRs); reviewing on-hand/accessible all-source and IMINT products and databases to see if the needed intelligence is available; planning supporting collection, production, and dissemination efforts for validated requirements; issuance of orders and requests to IMINT and all-source agencies; integration and coordination of intelligence operations with maneuver, fires, communications and information systems (CIS) and combat service support (CSS); and supervision to assess the productivity of these agencies to determine if PIRs and IRs are being satisfied, and to rapidly respond to changing battlespace conditions, modifying old or initiating new IMINT orders and operations as appropriate.

The core nodes for all MAGTF intelligence planning are the G-2 plans branch within the MEF G-2 section for intelligence support to future plans; the G-2 operations branch for intelligence support to the current and future operations cells; and the support cell within the IOC established by the intelligence battalion, under the direction of the ISC, for all detailed internal and supporting intelligence and reconnaissance planning.

Effectively identifying IMINT requirements is critical to successful IMINT operations. This is true for several reasons. IMINT operations are only as successful if integrated intelligence planning and direction, collection and production management, exploitation, and dissemination functions are effectively accomplished, and especially since generally limited imagery collection and production assets are available. Finally, each and every IMINT requirement requires a well-planned and potentially different technology mix of tools, significant computing power, and technically qualified personnel.

Stating IMINT requirements well is the best way to improve a unit's chances of satisfying their imagery-related intelligence requirement.

Requests for imagery support are submitted via the chain of command using the Joint Tactical Air Reconnaissance/Surveillance (JTAR/S) format shown in appendix C. These will be processed in the IOC by the ISC in coordination with the G-2 operations officer and the G-2 air officer. Requests for imagery must include the following:

Mission

State what must be accomplished, such as finding unlocated enemy forces, distinguishing certain types of tanks, assessing the status of a bridge, etc.

Type of Target

Most MAGTF tactical IMINT requirements will be for point targets of 10 nautical miles or less. Broad area search requirements are taxing in terms of communications bandwidth requirements and man-hours; and should be avoided unless absolutely necessary.

Date Desired

Date desired (DATEDES) is the date-time-group of when the requester requires either the imagery or the IMINT product.

Latest Time Intel of Value

Latest time intel of value (LTIOV) is designated in cases where the intelligence value of IMINT collection would still be of use even if received after the specified date desired.

Intelligence Requirements

The requester must identify the specific IRs associated with the imagery/ IMINT request. This should also include a statement as to the preferred format/method and quantity for the desired intelligence products.

Example
I want to be able to clearly identify all obstacles on both approaches to the bridge across river X located at point Y to move tracked and wheeled vehicles across the bridge during the period 14-17 Oct 2000.

It is critical that commanders and non-intelligence planners understand what is required of them when stating an IMINT requirement. The following actions are necessary to ensure that IMINT requirements are effectively articulated to intelligence planners, collectors, producers, and disseminators:

- State clearly what is wanted to obtain from the imagery, what specifically it will be used to support, and when you anticipate these actions to occur.
- State your DATEDES, which is the date and time you require the imagery or IMINT product be provided to you. This provides IMINT planners with a way of prioritizing their missions, especially when there are limited assets available. This also allows intelligence personnel the option of providing a partial or lower quality product by the DATEDES and using the limited assets for an operation in the execution phase.

Example
DATEDES is 1200 14 Oct 00 to support planning and briefing.

- State your LTIOV and what it will support. It is critical that the user carefully considers the date and time submitted as LTIOV, because if IMINT planners cannot meet the LTIOV, the request will be rejected.

  Note: IMINT and intelligence planners must notify supported commanders immediately once it is identified that a LTIOV cannot be met, and that their IMINT requirement will not be supported.

Example
LTIOV 0500 15 Oct 00, 1 hour prior to the estimated crossing of the line of departure.

- State the format you desire and at least one acceptable alternative for the IMINT products to be produced. If you have any specific requirements such as specific annotation, state that as well.

Collection

Collection is defined as the gathering of intelligence data and information to satisfy identified validated IRs. Within the MAGTF, collection management is a function of the collection management and dissemination (CMD) section that is established during operations within the IOC support cell. For IMINT, the collection phase of the intelligence cycle is complete when the imagery information and data are provided to the processing and production elements in the P&A cell. Imagery collectors available to support the MAGTF may be manned/unmanned, airborne/ground-based, systems or sensors that can operate across the MAGTF areas of interest in day or night, all-weather conditions. The IOC may substitute or supplement organic capabilities by receiving photographic, EO, infrared, radar/multispectral imagery, and IMINT from national, theater, other services, host country, embassy team sources, and other multinational allies.

Example
Request that a finished imagery product be posted in JPEG format on the MEF imagery homepage accessible via either the MAGTF tactical data network (TDN) or SIPRNET. Request standard annotation set. Acceptable alternate format is hard copy print (10 each) in 11x 17 inch format.

Processing and Exploitation

Processing and exploitation involves the conversion of collected data into information suitable for the production of intelligence. Imagery processing for IMINT purposes refers to the conversion/transformation of exposed film or electronic photographic, EO, infrared, and radar imagery into a form usable for interpretation and analysis. Softcopy imagery is manipulated electronically, internal to a processing/production system. Imagery exploitation by the IIP's imagery analysts is driven by specified PIRs and IRs and allows the MAGTF to gain the fullest possible advantage derived from imagery data by identifying specific pieces of equipment, measuring the dimensions of structures found on an image, identifying potential targets,

assessing BDA and I&W factors, and otherwise producing IMINT from imagery data.

Production

Production is the activity that converts information into intelligence through the integration, analysis, evaluation, and interpretation of all-source data and the preparation of intelligence products in support of known or anticipated user requirements. IMINT production refers to writing imagery reports; annotating imagery products; creating imagery-derived products; integrating and fusing IMINT into all-source intelligence products; and identifying new or remaining intelligence gaps requiring follow-on intelligence collection or production support. Most IMINT production is accomplished by the IIP, while the P&A cell within the IOC is the principal producer of all-source intelligence products.

Dissemination

Dissemination is the timely conveyance of intelligence to users in a suitable form. The ISC, per the direction and guidance of the AC/S G-2, has principal responsibly for intelligence dissemination within the MEF. The ISC must identify intelligence reporting criteria for both routine and time-sensitive intelligence, determine the forms/formats to be used, and then select the means for delivering intelligence and IMINT products to all supported commanders. For example, intelligence reporting criteria will provide imagery collectors and IMINT producers necessary guidance for when data and products will be delivered to intelligence production or C2 nodes, and when these will be disseminated directly to commanders. Formats selected may be text, graphics or other intelligence products depending upon a variety of factors (available time, capabilities of users, etc.). Further, IMINT operations must be planned and coordinated with supporting MAGTF CIS and courier operations to ensure IMINT products can be delivered or transmitted to users in a timely manner. The core nodes for intelligence dissemination execution are the IOC support cell, and the G-2 section watch within the MEF's current operations center (COC).

Utilization

The commander is responsible for the effective use of intelligence for decisionmaking purposes. Utilization of intelligence for decisionmaking during planning and execution is the ultimate objective of intelligence. The G-2/S-2 facilitates the effective use of intelligence, and thus of IMINT, by supervising the entire intelligence development effort and assisting the commander and staff in understanding intelligence products and their application. Additionally, the utilization phase provides the basis for the continuous functioning of the intelligence and supporting IMINT cycles. It will determine whether IRs have been completely satisfied; those that have not will then require additional intelligence development effort. Finally, as some IRs are satisfied, new ones will be generated. In all cases, utilization provides guidance, feedback, and orders for subsequent intelligence and IMINT operations.

G-2/S-2 Role in the Intelligence Cycle

Figure 1-2 depicts the G-2/S-2 role in the intelligence cycle and highlights that IMINT is one of the capabilities needed to support overall MAGTF intelligence requirements and operations. Since IRs are numerous, complex, and challenging, no single intelligence discipline, source or sensor can provide all of the required data and intelligence in the correct usable format. Some specific data must be processed and all of the seemingly unrelated, individual pieces of information must be evaluated, analyzed, and integrated into a usable, fused, all-source intelligence product that satisfies the commander's operational information needs.

1006. LEVELS OF IMINT OPERATIONS

MAGTFs rely on a complementary mix of tactical, joint, theater, other-services, and national imagery and IMINT sources to support planning and operations (see figure 1-3). External imagery support is particularly important in viewing denied areas and assisting the MAGTF in pre-deployment planning and imagery archive development. As the MAGTF moves towards an AO, imagery support is provided by a mix of national, theater, and other-services assets. Once a MAGTF is within the AO, its organic assets will take on greater importance and provide significant imagery support; however, support is still required from external assets to broaden the commander's view.

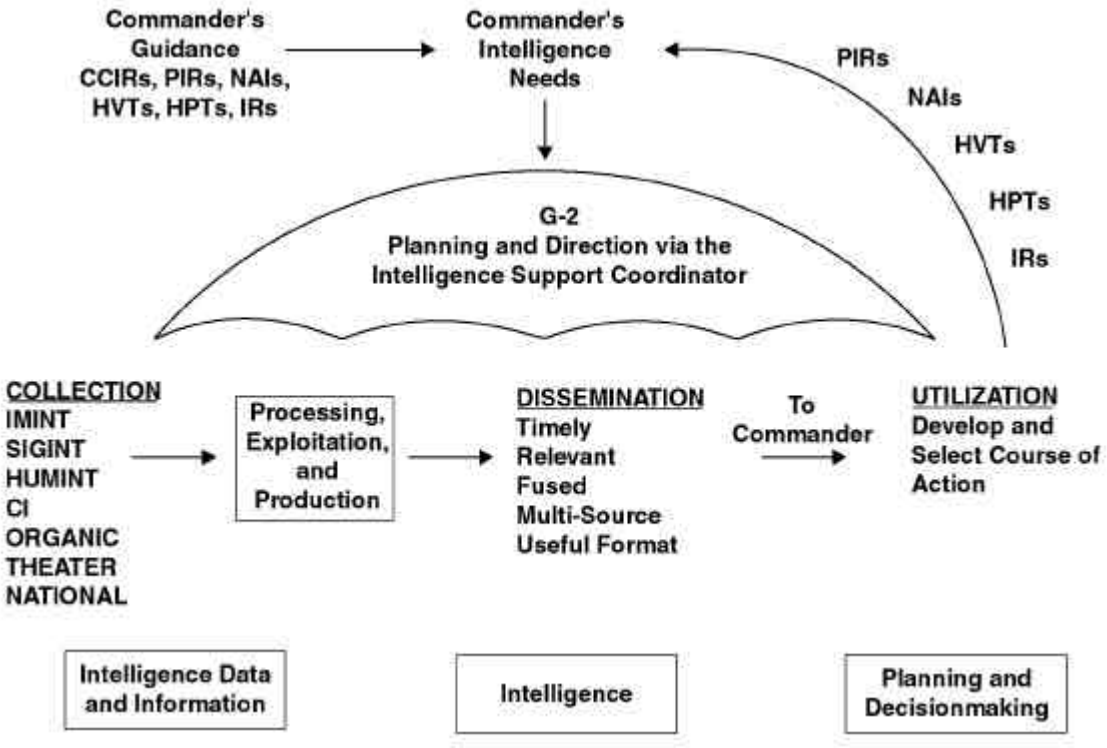
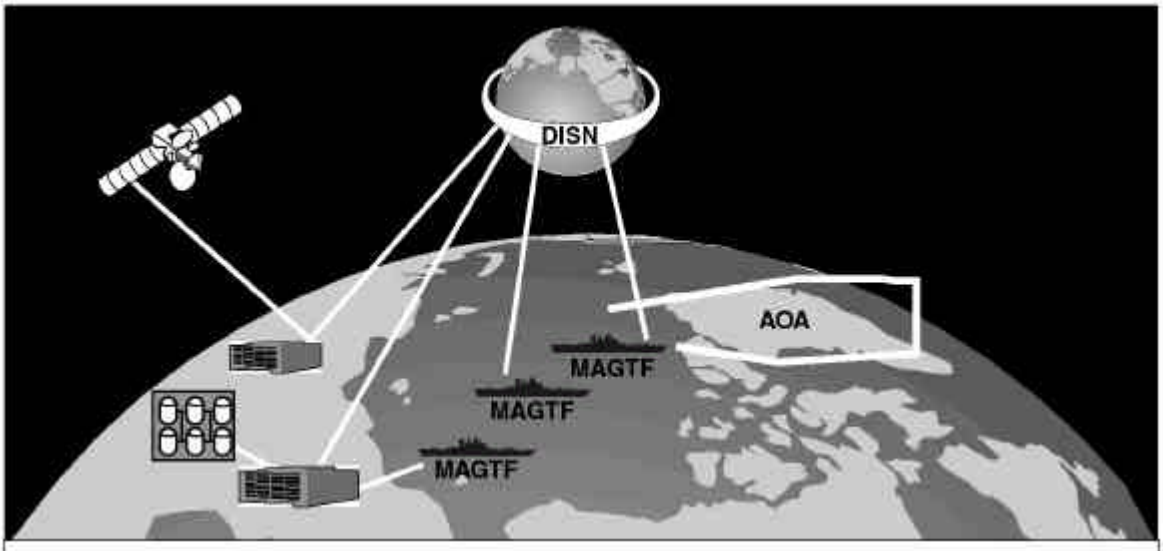


Figure 1-2. G-2/S-2 Role in the Intelligence Cycle.

National IMINT

National IMINT is extremely valuable for MAGTF purposes, particularly in the early phases of MAGTF operational planning and for viewing denied areas. MAGTF requirements for national IMINT support are submitted via the operational chain of command to the Defense Intelligence Agency (DIA) for ultimate validation, prioritization, and coordination with pertinent elements of the national imagery community (see figures 1-4 and 1-5 on page 1-14). National imagery reconnaissance assets, when available, can be very responsive when at least a 6-hour lead-time exists. The passive nature of most national IMINT collection operations has the advantage of requiring little coordination efforts by the MAGTF beyond the initial nomination, validation, and forwarding of the imagery request. Planning time over target (TOT) parameters for most joint force air component commander (JFACC) operations is 72 hours, with aviation combat element (ACE) mission planners generally operating on a 48-hour cycle; Marine expeditionary unit (special operations capable) (MEU [SOC]) ACE and squadron level mission



Imagery Support to MAGTF Operations

Pre-deployment
- Load MAGTF IPLs with imagery
- Pre-deployment packages (CD ROM)
- Digital Imagery Database
  - Area Coverage Baseline
  - Baseline Target/Mission Data
  - Geospatial Information
  - Image Maps
  - Mosaics

En route to Area of Operations
- Over-the-Air-Updates (OTAU)
  - Automatic/Profiled Update
  - Target Update Images
  - Special Area Imagery
  - Information and Service Updates

Area of Operations
- (OTAU) and "Pull"
  - Support MAGTF Operations Plan
    - Landing Zone Analysis
    - Mission Planning
    - All-source Visualization and Analysis
  - Support ATO Cycle
    - Mission Planning
    - Damage Assessment
  - Support Special Operations

A goal of imagery architecture development is to ensure that imagery products are available to support the MAGTF during all phases of the operation, regardless of geographic location.

Figure 1-3. Imagery Support to MAGTF Operations.

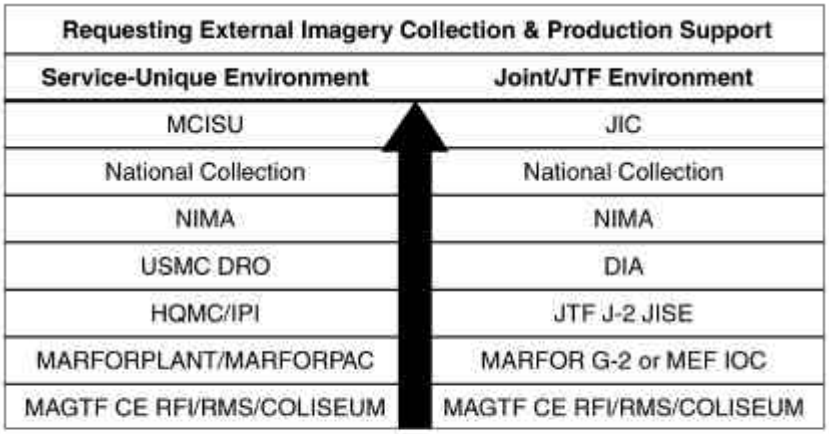


Figure 1-4. Requesting National Imagery Collection.

planners typically operate on a cycle of 24 hours or less. (Specific technical and operational capabilities and procedures for most national IMINT resources are classified; refer to either the *Joint Tactical Exploitation of National Systems* manual or theater tactics, techniques, and procedures (TTP) for additional information.)

Theater and Joint Task Force IMINT

Theater CINCs play a significant role in imagery support to MAGTFs because of the critical requirement for component interoperability during

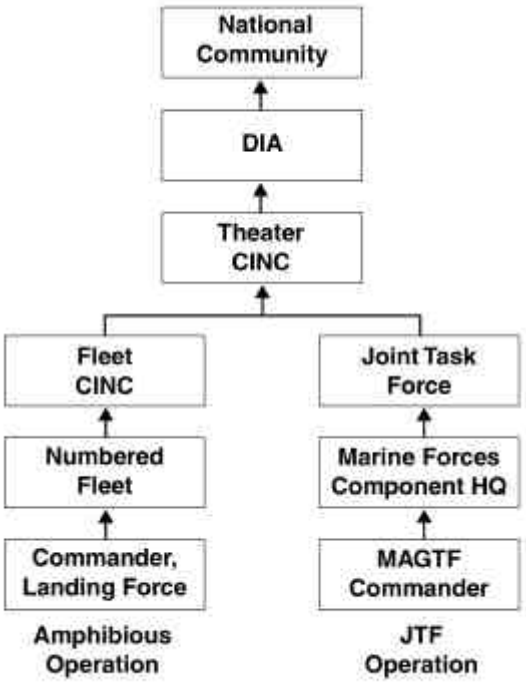


Figure 1-5. External Imagery Support Request Chain.

joint operations. Joint and theater IMINT is provided by the combatant command's organic imagery assets, such as the J-STARS, U-2, and theater UAVs. Combatant commands, through their joint intelligence centers and joint analysis centers, also support component, subordinate intelligence centers', and joint task forces' (JTFs') operational requirements for specific imagery and IMINT support, including processing, exploitation, and production of substantive imagery-related intelligence.

Tactical IMINT

MAGTF Tactical IMINT

MAGTF tactical IMINT operations include intelligence derived from the collection, processing, exploitation, production, and dissemination of imagery derived from organic collectors (e.g., F/A-18 with ATARS), as well as imagery collected by national or theater collectors but exploited, tailored to MAGTF requirements, and fused into all-source intelligence products, and then disseminated throughout the MAGTF from the IOC. Organic collectors of imagery and imagery-related information, such as UAVs and hand-held cameras, can provide both routine and time-sensitive tactical intelligence. Because MAGTFs are task-organized, both vary their organic capabilities and the degree of external support they require. Forward-deployed MEUs (SOC) engaged in forward presence missions normally have only a nucleus of imagery analysts (military occupational specialty [MOS] 0241) providing support within the command element's (CE's) intelligence section and rely heavily upon external support to fulfill their imagery needs. A MEF with its significant organic imagery capability will need to rely less on external support. In either situation, a MAGTF must plan for a tailored combination of organic, joint, theater, and national imagery that meets the MAGTF's needs for imagery support. Chapters 3 and 4 address current and planned Marine Corps imagery organizations and capabilities available as organic to MAGTFs.

Naval IMINT

MAGTF and amphibious task force (ATF) intelligence officers will normally establish operations within the amphibious task force intelligence center (ATFIC) aboard the ATF flagship, consolidating and collaboratively executing ATF and landing force (LF) IMINT and all-source intelligence operations. The organic IMINT capabilities of the ATF and LF are generally limited, necessitating reliance for IMINT support from secondary imagery dissemination from fleet intelligence organizations. A key IMINT resource is the three F-14 Tomcats configured with the TARPS in one of two F-14 Squadrons assigned to each carrier battle group (CVBG). TARPS has two optical sensors (day-only) and one day/night infrared imagery sensor. Navy imagery specialists exploit the film-based TARPS imagery and provide either IMINT reports or actual images to the MAGTF.